CLAIM AMENDMENTS

1. (original) A method for the production of propylene from a liquid charge stream containing C_4 to C_8 olefins that evaporates at 25 to 200 °C and is superheated to 350 to 400 °C, wherein the formed vapor containing the olefins is mixed with hot water vapor, the olefins vapor mixture is converted at inlet temperatures of 450 to 550 °C and pressures of 0.5 to 3.0 bar (abs) on a shape-selective, pentasil-type zeolite fixed-bed catalyst (9), the reaction mixture formed thereby is cooled to 100 to 200 °C, and through a subsequent further cooling to temperatures of 40 to <100 °C a partial condensation is carried out with formation of a gaseous phase containing essentially ethylene, propylene, C_4 to C_8 olefins and additional hydrocarbons and a liquid phase that is essentially comprised of water and is returned to the charge stream, characterized in that the gaseous phase containing ethylene, propylene, C_4 to C_8 olefins and additional hydrocarbons that is formed during a partial condensation carried out by means of a quenching step (13) is compressed to a pressure of 20 to 30 bar (abs), the gaseous and liquid phase that exit from the compression step (15) are separated into a gaseous phase containing essentially propylene, ethylene, and other light hydrocarbons and a liquid phase containing C_4+ olefins, and the liquid phase is separated into a fraction containing C_4 to C_6 olefins and a fraction containing C_7+ olefins.

2. (original) The method according to claim 1, characterized in that the water stream accumulated as condensate in the quenching step (13) is re-evaporated, then heated to a temperature of 600 to 800°C, and returned to the charge stream containing vaporous hydrocarbons.

3. (currently amended) The method according to ~~any of the claims 1 and 2~~ claim 1, characterized in that the majority of the generated C_4 to C_6 olefins is returned to the charge stream containing vaporous hydrocarbons.

4. (currently amended) The method according to ~~any of the claims 1 to 3~~ claim 1, characterized in that the water that accumulates in the compression step (15) is evaporated, then heated to a temperature of 600 to 800°C, and returned to the charge stream containing vaporous hydrocarbons.